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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/020,519 | 12/14/2001 | Brett Alan Bradley | P0501 | 8762 |
| 23735 | 7590 | 12/14/2004 | EXAMINER | |
| DIGIMARC CORPORATION 9405 SW GEMINI DRIVE BEAVERTON, OR 97008 | | | TABATABAI, ABOLFAZL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2625 | |

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,519

Applicant(s)

BRADLEY ET AL.

Examiner

Abolfazl Tabatabai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-3, 6, 8-11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boncelet, Jr. et al (U S 6,557,103 B1) in view of Petrovicl (U S 6,430,301 B1). Regarding claim 1, Boncelet discloses a method of coding a message for digital watermark embedding of the message into a host media signal comprising:

performing a block coding on a message payload (column 8, lines 2-6);

performing a convolutional coding on the block coded payload to generate a raw message (column 7, lines 66-67).

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However, Boncelet is silent about the specific details regarding the step of:

digital watermark embedding the raw message into the host media signal.

In the same field of endeavor (watermarking), however, Petrovic discloses formation and analysis of signals with common and transaction watermarks comprising the step of:

digital watermark embedding the raw message into the host media signal
(column 3, lines 1-5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use digital watermark embedding the raw message into the host media signal as taught by Petrovic in the system of Boncelet because Petrovic provides Boncelet an improved system for transaction code embedding and detecting digital watermark. This system should overly computationally intensive and costly since embedding is performed frequently. Although some complex algorithms can make sense for embedding a high quality, high security watermark in a production studio, it may well be too costly to run it on the fly in the internet distribution of copyright content. This system provides a transaction code and detection with the above advantageous.

Regarding claim 2, Boncelet discloses the method of claim 1 including:

spread spectrum modulating the raw message (column 5, lines 43-44).

However, Boncelet is silent about the specific details regarding the step of :

digital watermark embedding the raw message into the host media signal.

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In the same field of endeavor (watermarking), however, Petrovic discloses formation and analysis of signals with common and transaction watermarks comprising the step of:

digital watermark embedding the raw message into the host media signal (column 3, lines 1-5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use digital watermark embedding the raw message into the host media signal as taught by Petrovic in the system of Boncelet because Petrovic provides Boncelet an improved system for transaction code embedding and detecting digital watermark. This system should overly computationally intensive and costly since embedding is performed frequently. Although some complex algorithms can make sense for embedding a high quality, high security watermark in a production studio, it may well be too costly to run it on the fly in the internet distribution of copyright content. This system provides a transaction code and detection with the above advantageous.

Regarding claim 3, Boncelet discloses the method of claim 2 wherein the spread spectrum modulation includes modulating raw message bits output from the convolutional coding with a key (column 3, lines 44-54 and column 7, lines 66-67).

Regarding claim 6, Boncelet is silent about the specific details regarding a computer readable medium on which is stored instructions for performing the method of claim 1.

In the same field of endeavor (watermarking), however, Petrovic discloses formation and analysis of signals with common and transaction watermarks comprising the

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storage (fig. 3 element 324).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a computer readable medium on which are stored instructions as taught by Petrovic in the system of Boncelet because Petrovic provides Boncelet an improved system for transaction code embedding and detecting digital watermark. This system should overly computationally intensive and costly since embedding is performed frequently. Although some complex algorithms can make sense for embedding a high quality, high security watermark in a production studio, it may well be too costly to run it on the fly in the internet distribution of copyright content. This system provides a transaction code and detection with the above advantageous.

Regarding claim 8, Boncelet discloses a method of coding a message for digital watermark embedding of the message into a host media signal comprising:

performing error correction coding on a message payload (column 8, lines 2-6);

However, Boncelet is silent about the specific details regarding the steps of:

digital watermark embedding the raw message into the host media signal.

performing M-ary modulation on the error correction encoded payload to generate a raw message;

In the same field of endeavor (watermarking), however, Petrovic discloses formation and analysis of signals with common and transaction watermarks comprising the steps of :

digital watermark embedding the raw message into the host media signal (column 3, lines 1-5).

performing M-ary modulation on the error correction encoded payload to generate a raw message (column 6, line 54 and column 11, lines 11-16).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use digital watermark embedding the raw message into the host media signal and M-ary modulation as taught by Petrovic in the system of Boncelet because Petrovic provides Boncelet an improved system for transaction code embedding and detecting digital watermark. This system should overly computationally intensive and costly since embedding is performed frequently. Although some complex algorithms can make sense for embedding a high quality, high security watermark in a production studio, it may well be too costly to run it on the fly in the internet distribution of copyright content. This system provides a transaction code and detection with the above advantageous.

Regarding claim 9, Boncelet discloses the method of claim 8 wherein the error correction coding comprises convolutional coding (column 7, lines 64-67).

Regarding claim 10, Boncelet discloses the method of claim 8 wherein the error correction coding comprises block coding (column 8, lines 2-3).

Regarding claim 11, Boncelet discloses the method of claim 10 wherein the block coding comprises Reed Solomon coding (column 3, lines 58-60 and column 7, lines 24-30).

Regarding claim 17, Boncelet is silent about the specific details regarding a computer readable medium on which is stored instructions for performing the method of claim 8.

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In the same field of endeavor (watermarking), however, Petrovic discloses formation and analysis of signals with common and transaction watermarks comprising the steps of :

digital watermark embedding the raw message into the host media signal (column 3, lines 1-5).

performing M-ary modulation on the error correction encoded payload to generate a raw message (column 6, line 54 and column 11, lines 11-16).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use computer readable medium on which is stored instructions as taught by Petrovic in the system of Boncelet because Petrovic provides Boncelet an improved system for transaction code embedding and detecting digital watermark. This system should overly computationally intensive and costly since embedding is performed frequently. Although some complex algorithms can make sense for embedding a high quality, high security watermark in a production studio, it may well be too costly to run it on the fly in the internet distribution of copyright content. This system provides a transaction code and detection with the above advantageous.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 4, 5 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Schumann et al (6,285,774 B1).

Regarding claim 4, Schumann discloses a method of decoding a message for digital watermark reading of the message from a host media signal in which the message is embedded, the method comprising: detecting an estimate of a raw message carried in a digital watermark in the host media signal (column 3, lines 31-35 and column 38, line 44);

performing convolutional decoding of the estimate of the raw message (column 9, lines 63-67); and,

performing block decoding of the convolutional decoded message to recover the message (column 6, lines 58-67; column 12, 24-35 and 32-35).

Regarding claim 5, Schumann discloses the method of claim 4 including:

spread spectrum demodulating the estimate of the raw message from the host media signal (fig, 4b; element 404 and column 12, lines 8-21).

Regarding claim 7, Schumann discloses a computer readable medium on which is stored instructions for performing the method of claim 4 (column 12, lines 33-35).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boncelet, Jr. et al (U S 6,557,103 B1) and Petrovicl (U S 6,430,301 B1) as applied to claims 8 and 10 above and further in view of Moskowitz et al (5,889,868).

Regarding claim 12, Boncelet and Petrovic are silent about the specific details regarding the method of claim 10 wherein the block coding comprises BCH coding. In the same field of endeavor (watermarking), however, Moskowitz discloses optimization methods for the insertion, protection, and detection of digital watermarks in digitized data comprising BCH coding (column 7, lines 39-45). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use BCH coding as taught by Moskowitz in the system of Boncelet because Moskowitz provides Boncelet an improved method which maintains the highest quality of a given content signal as it was mastered, with its watermarks suitably hidden, taking into account usage of digital filters and error correction presently

concerned solely with the quality of content signal. This method preserves quality of underlying content signals, while using methods for quantifying this quality to identify and highlight advantageous locations for the insertion of digital watermarks.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 13-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boncelet, Jr. et al (U S 6,557,103 B1) in view of Zehavil (U S 5,602,833).

Regarding claim 13, Boncelet, discloses a method of decoding a message for digital watermark reading of the message from a host media signal in which the message is embedded, the method comprising:

performing error correction decoding of the estimate of the raw message to recover the message (fig.3; element 48 and column 4, lines 59-64).

However, Boncelet is silent about the specific details regarding the step of:

detecting an estimate of a raw message carried in a digital watermark in the host media signal by performing M-ary demodulation;

In the same field of endeavor (watermarking), however, Zehavi discloses method and apparatus for using walsh shift keying in spread spectrum communication system comprising the step of:

detecting an estimate of a raw message carried in a digital watermark in the host media signal by performing M-ary demodulation (column 24, lines 29-37).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use M-ary-demodulation as taught by Zehavi in the system of Boncelet because Zehavi provides Boncelet a system which it improves reception while remaining compatible with modulation schemes and spread spectrum modulation techniques, such as code division multiple access, spread spectrum techniques, provide significant advantages over the other modulation schemes, especially when providing service for a large number of communication system users. Also this system supports both diversity and soft hand-off transfer between two communication links where one is using non-coherent modulation/demodulation.

Regarding claim 14, Boncelet, discloses the method of claim 13 wherein the error correction decoding comprises block decoding (column 7, lines 45-48).

Regarding claim 15, Boncelet, discloses the method of claim 14 wherein the block decoding comprises Reed Solomon decoding (column 7, lines 36-45).

Regarding claim 16, Boncelet, discloses the method of claim 13 wherein the error correction decoding comprises convolutional decoding (column 4, lines 61-64 and column 7, lines 64-67).

Regarding claim 18, Boncelet is silent about the specific details regarding a computer readable medium on which is stored instructions for performing the method of claim 13.

In the same field of endeavor (watermarking), however, Zehavi discloses method and apparatus for using walsh shift keying in spread spectrum communication system comprising a computer readable medium on which is stored instructions for performing the method of claim 13 (column 25, lines 13-17).

detecting an estimate of a raw message carried in a digital watermark in the host media signal by performing M-ary demodulation (column 24, lines 29-37).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use storage as taught by Zehavi in the system of Boncelet because Zehavi provides Boncelet a system which it improves reception while remaining compatible with modulation schemes and spread spectrum modulation techniques, such as code division multiple access, spread spectrum techniques, provide significant advantages over the other modulation schemes, especially when providing

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service for a large number of communication system users. Also this system supports both diversity and soft hand-off transfer between two communication links where one is using non-coherent modulation/demodulation.

Other Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tewfik et al (U S 6,272,634 B1) disclose digital watermarking to resolve multiple claims of ownership.

Petrovic et al (U S 5,940,135) disclose apparatus and method for encoding and decoding information in analog signals.

Tewfik et al (U S 6,442,283 B1) disclose multimedia data embedding.

Hayshi et al (U S 6,694,040 B2) disclose data processing apparatus and method, and memory medium.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to ABOLFAZL TABATABAI whose telephone number is (703) 306-5917.

The Examiner can normally be reached on Monday through Friday from 9:30 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mehta Bhavesh M, can be reached at (703) 308-5246. The fax phone number for organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abolfazl Tabatabai

Patent Examiner

Group Art Unit 2625

December 12, 2004

A-Tabatabai